

TI 245A

Technical Information Surface Protection Linings
Issue 06.07.2022

ALKADUR HR LF

Electrically conductive, self-levelling, crack-bridging and highly chemically resistant coating system.

Base

Epoxy resin

Material Group

Levelling Coatings

Sealing layers

With national technical approval by DIBt (abZ)

Description and use

Electrically conductive, self-levelling, crack-bridging and highly chemically resistant epoxy resin-based coating system for concrete surfaces.

National technical approval by DIBt, Berlin Z-59.16-269.



The complete coating system is trafficable and its very good general chemical resistance against fats, oils, solvents, acids and bases allows for the application in a wide industrial range, indoors as well as outdoors.

The surface is smooth (design 1) and can be provided with an slip-resistant surface if necessary (design 2).

When cured, the sealing layer is particularly low in emissions and suitable for indoor use. It fulfils the emission requirements of the AgBB scheme and Class A+ of the VOC regulation of the French Ministry of Environment (MEDDTL).

If a covering of the sealing layer by brick or tile lining is required, e.g. system ALKADUR HR LF PROTECT 2 [245C] can be used.

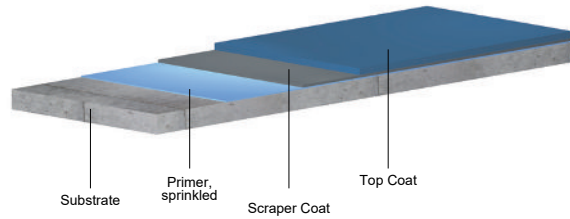
Properties

- Electrically conductive
- Self-levelling
- Plain coloured
- Jointless
- Smooth surface
- Slip-resistant design possible
- Crack-bridging (according to national technical approval) ≤ 0.3 mm at 1.6 mm Top Coat
- Crack-bridging (according to national technical approval) ≤ 0.5 mm at 2.0 mm Top Coat
- Fit for vehicles with pneumatic, solid rubber, Vulkollan or polyamide tyres
- Depending on the chemical stress, temperature resistant up to 50 °C on the surface (up to 100 °C for short periods, e.g. with high-pressure cleaners).

System Design

Floor surfaces design 1

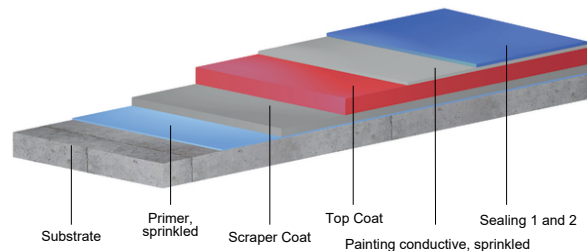
- Alkadur HR Primer ,sprinkled with SKC-Filler 15
 - Alkadur HR LF Scraper Coat
Layer thickness approx. 0.4-0.5 mm
 - Alkadur HR LF Top Coat
Layer thickness approx. 2.0 mm or approx. 1.6 mm
- Total thickness is approx. 2.5 mm or 2.1 mm.



Graphic not true to scale

Floor surfaces design 2 (with additional slip-resistant surface)

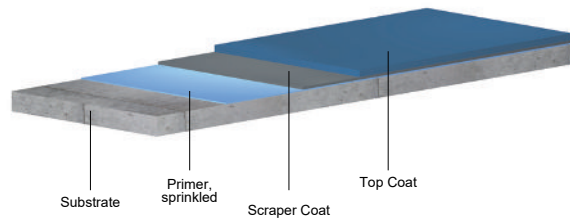
- Alkadur HR Primer ,sprinkled with SKC-Filler 15
- Alkadur HR LF Scraper Coat
Layer thickness approx. 0.4–0.5 mm
- Alkadur HR LF Top Coat
Layer thickness approx. 2.0 mm or approx. 1.6 mm
- Alkadur HR Conductive Varnish sprinkled with SKC-Filler 1L or SKC-Filler 2L
- Alkadur HR Sealing 1 and 2



Graphic not true to scale

Wall surfaces

- Alkadur HR Primer ,sprinkled with SKC-Filler 15
 - Alkadur HR LF Scraper Coat with PE-Fibre 920T as thixotropic agent
Layer thickness approx. 0.4–0.5 mm
 - Alkadur HR LF Top Coat with PE-Fibre 920T as thixotropic agent
Layer thickness twice approx. 1.5 mm
- Total thickness is approx. 3.5 mm.



Graphic not true to scale

Physical Data

Parameters for the sealing layer

Property [unit], Test method	Value
Density [g/cm ³], DIN EN ISO 1183-1, ASTM D 792	1.14
Dissipation resistance [Ohm] to DIN EN 14879-3 at a relative humidity of > 70 %, ASTM F 150/98	≤ 10 ⁶
Shore D hardness, DIN ISO 7619, ASTM D 2240	75
Abrasion resistance [mg/1000 turns] ASTM D 4060, Taber Disc CS 17	42
Modulus of elasticity [MPa], DIN EN ISO 178, ASTM C 580	500*
Tensile strength [MPa], DIN EN ISO 527	35*
Crack bridging at 1.6 mm top coat [mm]	0.3
Crack bridging at 2.0 mm top coat [mm]	0.5
Thermal Limit [°C]	50
for a short time (e.g. for high-pressure cleaners)	100
Data are mean values.	
*after heat treatment	

Chemical Resistance

Very good resistance to solvents, acids, alkalis, oils and fats.

For detailed information on chemical resistance, please refer to the national technical approval resp. the Technical Information TI 230 C.

Substrate

Requirements

Application temperature	approx. 10–30 °C
Dew point distance	> 3 K
Dew point distance from 70% air humidity	> 5 K

Optimal temperature is 20 °C. Higher and lower temperatures influence the pot life and consistency of the mixtures.

Avoid draughts and solar radiation.

Concrete

Refer to DIN EN 14879-1 as well as to STEULER-KCH-Formsheet 010.

To achieve sufficient adhesive tensile strength, the substrate must generally be pre-treated in such a way that it is free of cement slurry, cement skin, loose and friable parts, structural defects and separating substances.

The residual moisture of cementitious substrates must not exceed 4 %.

The condition of the substrate must be documented by STEULER-KCH-Test-Record 006 (concrete).

Moisture

During application, the substrate must be kept dry. No moisture (condensate, mist, etc.) must get onto the material.

Packaging / Shelf life

All components must be stored and transported dry. The minimum shelf life applies to a storage temperature of 20 °C, unless otherwise specified. Higher temperatures reduce, lower temperatures increase the minimum shelf life.

Component	Item number	Package	Content	Shelf life
Alkadur-HR-Solution	5035197001	Hobbock	25 kg	24 Months
Alkadur-HR-Solution	5035197020	Hobbock	16 kg	24 Months
Alkadur-HR-Hardener	5035198085	Drum	8.8 kg	24 Months
Alkadur-HR-Hardener	5035198001	Hobbock	25 kg	24 Months
Alkadur-HR-Top-Coat-Solution RAL 7030*	5035191002	Hobbock	20 kg	24 Months
Alkadur-HR-Top-Coat-Solution RAL 7032*	5035193002	Hobbock	20 kg	24 Months
Alkadur-HR-Sealing-Solution RAL 7030*	5035213031	Hobbock	21.5 kg	24 Months
Alkadur-HR-Sealing-Solution RAL 7032*	5035215031	Hobbock	21.5 kg	24 Months
SKC-Filler 15	5011202001	Bag	25 kg	24 Months
SKC-Filler 1L	5011192001	Bag	25 kg	24 Months
SKC-Filler 2L	5011193001	Bag	25 kg	24 Months
SKC-Filler 3L	5011194017	Bag	12.5 kg	24 Months
SKC-Filler 4L	5011195017	Bag	12.5 kg	24 Months
Carbon-Fibre 6 mm	5119089083	Pouch	30 g	24 Months
PE-Fibre 920T	5019028006	Bag	10 kg	24 Months
Steuler-Diluent EN	5060005005	Canister	4 kg	24 Months
Copper strip self-adhesive	9703301015	Roll 19-20 mm wide		unlimited

* The colours may differ slightly from the RAL colour template. Other colours on request.

For handling, transport and storage observe the relevant safety data sheets.

Mixing Ratio / Consumption

Alkadur HR Primer

Component	Mix	kg / mix	kg/m ²
Alkadur-HR-Solution	1.6 l	1.80	0.161
Alkadur-HR-Hardener	1.0 l	1.00	0.089
Total		2.80	0.250
Area per mix	≈ 11.2 m ²		
Application steps	1		
Sprinkling with SKC-Filler 15. Consumption approx. 0.5 kg/m ² .			

Alkadur HR LF Scraper Coat

Component	Mix	kg / mix	kg/m ²
Alkadur-HR-Solution	1.6 l	1.80	0.183
Alkadur-HR-Hardener	1.0 l	1.00	0.102
SKC-Filler 3L	3.1 l	2.60	0.265
Total		5.40	0.550
Addition of thixotropic agent for wall surfaces			
PE-Fibre 920T	1.0 l	0.03	0.003
Optional			
Steuler-Diluent EN *	46 ml	0.036	0.004
Area per mix	≈ 9.8 m ²		
Application steps	1		
Layer thickness	≈ 0.4–0.5 mm		

* If necessary, especially at temperatures below 15 °C. Do not use by application according to DIBt approval!

Alkadur HR LF Top Coat floor

Component	Partial mix	kg / mix	kg/m ² 1.6 mm	kg/m ² 2.0 mm
Alkadur-HR-Top-Coat-Solution	3.5 l	20.00**	1.253	1.595
With Carbon-Fibre 6 mm	premixed	0.03**	0.002	0.002
Alkadur-HR-Hardener	1.8 l	8.80**	0.545	0.703
Total		28.83	1.800	2.300
Addition of thixotropic agent for soil slopes > 2 %.				
PE-Fibre 920T	0.6 l	0.09 (3.0 l)	0.006	0.007
Area per partial mix			≈ 3.2 m ²	≈ 2.5 m ²
Area per mix			≈ 16 m ²	≈ 12.5 m ²
Application steps			1	1
Layer thickness			≈ 1.6 mm	≈ 2.0 mm

** pre-dosed package

Alkadur HR LF Top Coat wall

Component	Mix	kg / mix	kg/m ²
Alkadur-HR-Top-Coat-Solution	3.5 l	4.00	2.212
With Carbon-Fibre 6 mm	premixed	0.006	0.003
Alkadur-HR-Hardener	1.8 l	1.76	0.975
PE-Fibre 920T	6.6 l	0.20	0.110
Total		5.97	3.300
Area per mix	3.6 m ² per application step		
Application steps	2		
Layer thickness	1.5 mm per application step ≈ 3 mm total		

Floor surfaces design 2 with additional slip-resistant surface

Alkadur HR Conductive Varnish

Component	Mix	kg / mix	kg/m ²
Alkadur-HR-Top-Coat-Solution	4.4 l	5.00	0.129
Alkadur-HR-Hardener	2.2 l	2.20	0.057
SKC-Filler 4L	6.2 l	4.40	0.114
Total		11.60	0.300
Area per mix	≈ 39 m ²		
Application steps	1		
Sprinkling with SKC-Filler 1L (rough) or SKC-Filler 2L (fine). Consumption approx. 2.0 kg/m ² .			

Alkadur HR Sealing

Component	Mix	kg / mix	kg/m ² 1. Sealing	kg/m ² 2. Sealing
Alkadur-HR-Sealing-Solution	4.0 l	4.70	0.392	0.178
Alkadur-HR-Hardener	1.9 l	1.90	0.158	0.072
Total		6.60	0.550	0.250
Area per mix			≈ 12 m ²	≈ 26.4 m ²
Application steps			2	
Layer thickness			with SKC-Filler 1L ≈ 0.8 mm with SKC-Filler 2L ≈ 0.4 mm	

Consumption is reduced by approx. 20 % if gritting has been carried out beforehand with SKC-Filler 2L.

Pot Life

Pot life depends on temperature.

Temperature	Pot life
10 °C	70 min
20 °C	30 min
30 °C	20 min

Waiting and curing times

The minimum waiting time until further processing and the maximum waiting time between application steps are as follows (approx.):

Temperature	Walkable after	Maximum waiting time
10 °C	24 h	72 h
20 °C	16 h	48 h
30 °C	10 h	16 h

The finished coating is fully mechanically and chemically resistant at 20 °C after 7 days.

Safety and Disposal

The following points should be observed:

- Sufficient ventilation and venting (especially in pits and tanks)
- No smoking and no fire
- Safety Data Sheets
- Observe hazard warnings and safety instructions on labels
- Wear required personal protective equipment (avoid skin contact with materials)
- Clean and protect hands with skin protection soap (no solvents!) and skin protection cream
- Wear a dust mask when grinding (e.g. for repairs)
- Operating instructions as per § 14 of GefahrstoffV (Toxic Substances Act) and TRGS 507 (Technical regulations for Hazardous Substances - Germany)
- Accident prevention regulations by the Liability Insurance Association for the Chemical Industries (Germany)
- Avoid direct contact of the materials with the flame, especially during welding work (welding beads) on site

Preferably consume residual quantities. Do not pour into a spout or dustbin! Collect separately for disposal in durable, lockable and labelled containers.

GISCODE

Product	GISCODE
Alkadur HR Primer	RE90
Alkadur HR LF Scraper Coat	RE90
Alkadur HR LF Top Coat (different designs)	RE90
Alkadur HR Conductive Varnish	RE90
Alkadur HR Sealing	RE90

Cleaning and Maintenance

Observe cleaning instructions for STEULER-KCH Industrial Floors (Technical Information TI 198).

Cleaning of Equipment

Tools that are soiled with uncured materials can be cleaned with Steuler-Universal-Cleaner. Only clean in well ventilated areas.

All information contained in this Technical Information is based on the present state of our knowledge and practical experience. All data are approximate values for guidance only. A legally binding warranty of certain characteristics or the suitability for a certain purpose of use cannot be derived from this.

The information given in this Technical Information is our intellectual property. The Technical Information may neither be copied nor used by unauthorized parties, nor professionally distributed or otherwise made accessible to third parties without our prior consent.

This issue replaces all previous versions.